NEBRASKA PRACTICE DOCUMENTATION REQUIREMENTS

WETLAND RESTORATION (657)
WETLAND CREATION (658)
WETLAND ENHANCEMENT (659)

I. GENERAL

Minimum documentation requirements for this practice are outlined below. Documentation for associated practices or system components shall follow the appropriate practice documentation requirements. Additional documentation requirements can be found in the General Documentation Requirements section of the Nebraska Practice Documentation Requirements Manual.

A. References
1. National Engineering Manual (NEM)
2. Nebraska Field Office Technical Guide (FOTG)
3. National Engineering Handbook (NEH), Part 650 - EFH
4. Conservation plan for the unit
5. NEPA CP-52 Help Sheet (NPPH)
6. Wetland Reserve Program (WRP) Manual
7. Local supplemental criteria
8. Computer software

II. RESOURCE INVENTORY AND SURVEYS

A. Design Investigations
1. Preliminary and final wetland restoration plans for WRP projects
   a. Documentation requirements will be as required by the WRP manual.
   b. Contracting authority for the project(s)
2. Identify members of the bio-engineering team for complex restorations and WRP program implementation
3. Investigation by soil scientist
   a. Soil types, texture, hydric classification, hydric inclusions
   b. Depth to groundwater (static) for saturation-only hydric soils
4. Certified wetland determination may be needed (to acquire a 404 permit)
5. Description of the hydrologic manipulation or conversion activity
6. Topographic data (USGS Quad map and field survey topo map)
7. List of the hydric soils contained within the proposed site
8. Location of underground utilities.
9. Water rights issues
10. Operation and maintenance (O&M) issues and responsibilities
11. Necessary permits
12. Identify existing plant species and cover, both upland and wetland types.
13. Identification of pests
14. Scheduling of restoration work

15. Hydrology/water source
    a. Contributing drainage area (if applicable)
    b. Storm rainfall/runoff values
    c. Water budget, annual yield, or other documentation supporting hydrologic restoration treatments
16. Aerial photo or map showing location labeled with number of acres

B. Design Surveys
1. Topographic survey to develop earthwork quantity estimates and structure(s) layout.
    a. WRP boundaries
    b. Drainage channels and swales
    c. Adjacent lands impacted by predicted hydrologic footprint
    d. Utilities (buried and/or overhead)
    e. Property lines
    f. Cultural features
2. Field topographic surveys will be acquired by traditional methods as described in EFH Chapter 1, or by modern electronic survey methods such as total station or Global Positioning Satellite (survey grade).
3. Profiles and cross-sections -- record in field notes. If an electronic data collector is used, include hard copies of the raw data and reduced notes in the design folder. If a detailed topographic field survey is taken and the points are loaded into CADD software, the following profiles and cross-sections can be derived using the digital terrain map and may not have to be surveyed individually.
    a. Centerline of principal spillways or water control structures
    b. Centerline of auxiliary spillway
    c. Centerline of dike or embankment
    d. Typical cross-section of embankment
    e. Typical cross-section of excavated areas
    f. Cross-section of auxiliary spillway at the control section
4. Horizontal and Vertical Control
    a. A sufficient number of temporary benchmarks will be placed so that horizontal and vertical control can be established throughout the design, construction, and checkout of the structure.
    b. Vertical control will be established with the use of GPS survey grade equipment, or bench level circuits.
5. Field survey notes will conform to NEM Part 540 and follow standard field note documentation as illustrated in Technical Release 62 (TR-62) and/or Nebraska Standard Format for Engineering Notes Transmittal Sheets No. 3. Survey notes will be prepared such that they exhibit legible, logical, clear and concise data.

C. Environmental Inventory
1. NEPA inventory of resources -- form NE-CPA-52 must be completed by NRCS during planning
2. Archeological/Historical/Cultural Resources
    a. Complete all continuing environmental requirements stemming from planning as expressed in the General Documentation Requirements section of the Nebraska Practice Documentation Requirements Manual.

III. DESIGN

A. Design Data
   1. Design report
      a. History of project
      b. Hydrology and hydraulic summary
      c. Explanation of how design elevations were arrived at (top of dike, water levels, etc.)
      d. Potential impacts of the project on adjacent lands
      e. Design assumptions and rationale used
   2. Hydrology data
      a. Drainage area
      b. Runoff curve number
      c. Watershed slope
      d. Watershed length
      e. Sediment delivery
      f. Design storm(s) return period (year)
      g. Storm runoff (inches)
      h. Peak flow (cfs)
      i. Annual surface yield/water budget
   3. Hydraulic data: Show how elevations and dimensions were arrived for
      a. Auxiliary spillway
      b. Principal spillway/water control structure/stoplog structure
   4. Flood-routing data if needed
   5. Reservoir data (sediment delivery volume, stage-storage table)
   6. Structure data (top widths, side slopes, berm dimensions)
   7. Vegetation/seeding plan. Record the following information on form NE-CPA-8 or equivalent.
      a. Seedbed preparation for vegetation establishment, including soil amendments and cover crop, if applicable.
      b. Method of seeding and the seeding depth.
      c. Date(s) seeding may be done.
      d. Species and varieties to be seeded and the seeding rates.
      e. Pest management.
      f. Location and extent (acreage) of seeding.
      g. Certify completion of seeding on NE-CPA-8 or equivalent form.
   8. Quantity, time, and cost estimates.
   9. Initials/signatures and dates by the person(s) responsible for the design, approval, and checking of the design.

B. Permits
   1. Check with local, state, and Federal agencies to determine what if any permits are needed, such as:
      a. Nebraska Department of Natural Resources, Water Rights and Storage Permits
      b. Army Corps of Engineers, 404 Permit
      c. DEQ NPDES permit
      d. Local Zoning Board (floodplain permit)
      e. Easement(s) acquisition on adjacent lands where impacts will occur

IV. PLANS AND SPECIFICATIONS

A. Drawings
1. Use Nebraska standard drawings to the extent possible. These are to be supplemented by additional drawings or specification notes on the drawings to provide full installation instructions. Standard drawing sheet sizes will be used.
2. Cover Sheet
    a. Project name
    b. Sponsor name
    c. Practice Standard(s) that apply
    d. Designer (agency) name
    e. Location map showing drainage boundary
    f. Legal description
    g. Sheet index
    h. Engineer's seal (if required)
    i. NRCS Engineering Job Class from NE-ENG-14
    j. Hazard class
3. Data Sheet
    a. Legend and symbols
    b. Reservoir capacity table
    c. Hydrologic data
    d. Hydraulic data
    e. Table of quantities
    f. Construction notes

NOTE: Some of the items listed for Cover Sheet and Data Sheet may be moved and/or copied to other plan sheets as required.

4. Plan view of structural works and reservoir area. Include map orientation. Distance and bearing from a section corner to the structure is required for inventory size structures.
5. Profile and cross-section of auxiliary spillway.
6. Profile on centerline of embankment.
7. Typical cross-section of embankment.
8. Typical cross-section of excavated areas.
9. Constructed elevations, slopes, dimensions, and stationing on profiles and cross-sections.
10. Location and extent of borrow area.
11. Principal spillway and water control structures
    a. Profile on centerline
    b. Stationing, dimensions, elevations
    c. Location of related appurtenances such as anti-seep diaphragms, pipe supports, gates, stoplogs, etc.
    d. Skew angle on plan view of dam
12. Structural details -- as needed to clarify drawings
13. Construction notes -- add notes to clarify a component and furnish directions for installations to supplement standard specifications as needed.
    a. Construction plans shall include a statement requiring the contractor to notify the Nebraska One-Call System (Diggers Hotline) regarding utilities on the construction site. See the General Documentation Requirements section of the Nebraska Practice Documentation Requirements Manual for the recommended statement.

   b. Add notes as necessary to identify avoidance and, if needed, protection areas and boundaries associated with cultural resources, threatened or endangered species, or other resources needing temporary protection during installation.
   c. Detail method for plugging subsurface drains
   d. Contractor responsibility for repairing or restoring ingress and egress routes to pre-construction conditions.
14. Graphical scales
15. Benchmarks with elevation, description, and location.
16. Areas to be seeded and/or fenced
17. Spoil disposal areas

B. Specifications
1. Nebraska FOTG Conservation Practice specifications, component specifications from NEH Part 650, Engineering Field Handbook Appendix 1, or equivalent, modified as needed. Additional specifications may be written to provide full material and installation instructions.
2. Cover sheet (NE-ENG-47).
3. Include the NE-CPA-8 or equivalent in the construction specification for seeding (NE-6)

C. O&M Plans
1. As specified in the appropriate Practice Standard in Nebraska FOTG. O&M should specify responsibility for specific items.

D. Drawings, Specifications, O&M Plan Delivery
1. Letter of transmittal to contracting officer
2. Notes from pre-construction review with landowner and bio-engineering team

V. LAYOUT

A. Layout Surveys
1. Record in field notes. If an electronic data collector is used, include a hard copy of the raw data and a hard copy of the reduced notes.
2. Centerline alignment stakes.
3. Offset grade stakes for principal spillway, water control structure, etc., as necessary.
4. Slope or construction stakes for embankment and auxiliary spillway.
5. Location and grade stakes for structural components.
6. Stake the beginning and ending limits for plugging subsurface drains.

B. Quantity Computations
1. Compute quantities in embankments, dikes, cutoff trench, and other excavations as needed to verify certification of amounts and totals to the cost share agency. NE-ENG-15 (Standard Earthwork Computation Sheet) can be used to document such quantities. Methods to be used in making computations of quantities are:
   a. Double end area using cross section data
   b. Computer software - Area Vol., OHIO Cross-Sections with Quantities, CADD software, etc.
2. Compute quantities from layout notes. Final quantities are based on staked lines and grades and/or approved changes. In some cases, neat line quantities may also be used.
3. Show quantities of all components in the table of quantities on the drawings.

VI. COMPLIANCE CHECKING

A. Record in field notebook, on construction plans, or other.
   1. Pre-Construction conference minutes
      a. Contents of contract (if applicable)
      b. Drawings and specifications
      c. Construction safety
      d. Utilities and Digger's Hotline
      e. Quantities
      f. Method of payment
      g. Ingress and egress routes
      h. Scheduling of construction and inspection
      i. Exchange of phone numbers
   2. Profiles on centerline of embankments, channels, auxiliary spillway, and pipes\water control structures.
   3. Cross-sections of auxiliary spillway, earthen embankments, excavated areas.
   4. Elevations at inlet and outlet of water control structures and other structural appurtenances.
   5. Construction inspection reports and activities (Refer to NEH-19)recorded in the job diary or on the NE-ENG-49, 49A
      a. Discussions with contractor and others that have an impact on construction.
      b. Problems encountered during construction and how they were resolved.
      c. Pipes - check length, gauge, thickness, type, pressure rating, and diameter.
      d. Number, type, location, quality, and dimensions of appurtenances (gates, valves, trash racks, stoplogs, etc.).
      e. Material certification statement.
      f. Statement of compliance -- statement that construction is completed according to plans and specifications, signed and dated by the person certifying completion.

B. “As Built” Plans
   1. Refer to NEM, 512.51 and 512.52
   2. “As Built" plans are a record of constructed facilities. “As Built" plans are required when a significant change in design occurs during construction or when the job is designated Class V or higher. Changes are superimposed in a different color (usually red), or differentiated in some other manner (such as a drawing a box around the as-built value) on the official file copy and show:
      a. Significant[1] design changes.
      b. Significant[1] changes in linear measurement.
      c. Final quantities -- may be based on layout stake notes, if no changes were approved and work meets planned lines and grades.
      d. Identify as “As Built” on plans.

[1] / Determination of “significant” is a matter of judgment by the technician. As a general rule, changes that exceed normal measuring error allowances, normal construction tolerances, and methods of mathematical computation, should be considered as significant.